

CLAIMS

Claims 1-20 (canceled)

Claim 21 (previously presented): A heated handle, comprising:

a core formed of a substantially rigid member;

an outer covering that at least partially covers the core; and

a heater disposed at least partially between the core and the outer covering,
the heater including:

- i) a cushion formed of a material that has an elongation characteristic permitting it to be elongated at least about 50% of its own length prior to failure;
- ii) a separator that has an elongation characteristic permitting it to be elongated at least about 50% of its own length prior to failure; and
- iii) a conductor at least partially between the cushion and the separator, wherein the conductor is in a pattern configured for assisting the ability of the heater to elongate;

wherein the heater can elongate about 15% of its own length prior to any significant damage.

Claim 22 (previously presented): A handle as in claim 21, wherein the heater includes a plurality of protrusions corresponding to spokes of the handle.

Claim 23 (previously presented): A handle as in claim 21, wherein the conductor is in a lay-wire configuration between the cushion and the separator and the cushion is formed of a compressed polyurethane foam material.

Claim 24 (previously presented): A handle as in claim 23, wherein the conductor includes three distinct zones and at least one zone of the three zones extends substantially parallel to another zone of the three zones and the at least one zone is in the zig-zag configuration.

Claim 25 (previously presented): A handle as in claim 23, wherein the conductor is at least partially formed of strands that are formed of a metal alloy of copper and between about 1 % and about 10 % nickel.

Claim 26 (previously presented): A handle as in claim 25, wherein the conductor includes about 5 to about 7 strands and a diameter of each of the strands is between about 0.007 mm and about 0.011 mm.

Claim 27 (previously presented): A handle as in claim 21, wherein the separator has a heat transfer coefficient between about 0.10 W/m²K and about 2.0 W/m²K and the cushion has a heat transfer coefficient between about 0.005 and about 0.2 W/m²K.

Claim 28 (previously presented): A handle as in claim 27, wherein the cushion is closer to the core than the separator and a portion of the conductor is folded over on itself and twisted at a connection of the heater.

Claim 29 (previously presented): A steering wheel as in claim 21 wherein the cushion is laminated to the separator with an adhesive.

Claim 30 (previously presented) A steering wheel as in claim 29 wherein the adhesive is provided as a monolayer adhesive film.

Claim 31 (previously presented): A steering wheel for an automotive vehicle, comprising:

- a core of the steering wheel, the core being formed of a rigid member that is at least partially covered with a polymeric material, the core having a substantially circular configuration;

- an outer covering that covers a substantial portion of the core;

- a heater disposed substantially entirely between the core and the outer covering, the heater including:

- i) a cushion, the cushion being provided as a layer of polymeric material having at least one elastomer wherein the material for the cushion has an elongation characteristic permitting it to be elongated at least about 50% of its own length prior to failure;
- ii) a separator, the separator being provided as a fleece layer that is substantially coextensive with the cushion, wherein the material for the cushion has an elongation characteristic permitting it to be elongated at least about 50% of its own length prior to failure; and
- iii) a conductor substantially entirely between the cushion and the separator, the conductor having at least two distinct zones extending parallel to each other in a zig-zag configuration;

wherein the cushion is closer to the core than the separator and the heater can elongate about 15% of its own length prior to any significant damage.

Claim 32 (previously presented): A steering wheel as in claim 31, wherein the conductor includes three distinct zones extending substantially perpendicular to each other wherein the three zones form three separate circuits of a singular continuous conductive element and wherein a portion of the conductor is folded over on itself and twisted at a connection of the heater.

Claim 33 (previously presented): A steering wheel as in claim 31, wherein the heater includes a plurality of protrusions corresponding to spokes of the handle, the conductor is in a lay-wire configuration between the cushion and the separator and the cushion is formed of a compressed polyurethane foam material.

Claim 34 (previously presented): A steering wheel as in claim 31, wherein the conductor is at least partially formed of strands that are formed of a metal alloy of copper and between about 1 % and about 10 % nickel and the conductor includes about 5 to about 7 strands and a diameter of each of the strands is between about 0.007 mm and about 0.011 mm.

Claim 35 (previously presented): A steering wheel as in claim 31, wherein the separator has a heat transfer coefficient between about $0.10 \text{ W/m}^2\text{K}$ and about $2.0 \text{ W/m}^2\text{K}$ and the cushion has a heat transfer coefficient between about 0.005 and about $0.2 \text{ W/m}^2\text{K}$ wherein the cushion is closer to the core than the separator.

Claim 36 (previously presented): A steering wheel as in claim 31 wherein the cushion is laminated to the separator with a monolayer adhesive film.

Claim 37 (previously presented): A steering wheel for an automotive vehicle, comprising:

- a core formed of a rigid member that is at least partially covered with a polymeric material, the core having a substantially circular configuration;

- an outer covering that substantially entirely covers the core, the outer covering being formed of leather;

- a heater disposed substantially entirely between the core and the outer covering, the heater including:

- i) a cushion, the cushion being provided as a layer of polymeric material having at least one elastomer wherein the cushion is formed of compressed polyurethane, wherein the cushion has a heat transfer coefficient between about 0.005 and about $0.2 \text{ W/m}^2\text{K}$ and wherein the material for the cushion has an elongation characteristic permitting it to be elongated at least about 50% of its own length prior to failure;
- ii) a separator, the separator being provided as a fleece layer that is substantially coextensive with the cushion wherein the separator has a heat transfer coefficient between about $0.10 \text{ W/m}^2\text{K}$ and about $2.0 \text{ W/m}^2\text{K}$ and wherein the material for the cushion has an elongation characteristic permitting it to be elongated at least about 50% of its own length prior to failure; and
- iii) a conductor substantially entirely between the cushion and the separator, the conductor being formed of one singular

continuous conductive element wherein the conductor is formed of a plurality of copper wire strands that are woven together, the conductor is separated into three distinct zones, which form three separate circuits that extend parallel to each other in a zig-zag configuration and the strands are formed of a metal alloy of copper and between about 1 % and about 10 % nickel;

wherein the cushion is closer to the core than the separator and the heater can elongate about 20% of its own length prior to any significant damage.

Claim 38 (previously presented) A steering wheel as in claim 37 wherein the cushion is laminated to the separator with an adhesive.

Claim 39 (previously presented) A steering wheel as in claim 38 wherein the adhesive is provided as a monolayer adhesive film.

Claim 40 (previously presented) A steering wheel as in claim 39 wherein the heater is adhered to the covering with two way tape.

Claim 41 (new): A heated handle as in claim 1 wherein the conductor is formed of a plurality of copper wire strands that are woven together.